What is claimed is:

1. A microfluidic chip for mass spectrometric analysis comprising:

a microfluidic body formed with a plurality of reservoirs for containing at least one fluid medium;

a plurality of separated channels formed within the microfluidic body that are in fluid communication with a corresponding reservoir but are not in fluid communication with each other within at least a portion of the microfluidic body; and

an electrospray ionization tip formed with an open-ended distal tip portion that is positioned along an end surface of the microfluidic body, wherein the plurality of separated channels converge at the open-ended distal tip portion to direct an ionization spray derived from the fluid mediums.

2. The apparatus as recited in claim 1, wherein the open-ended distal tip portion of the electrospray ionization tip includes a layer of hydrophilic material.

3. The apparatus as recited in claim 1, further comprising:

a top laminate layer for enclosing the plurality of separated channels formed within the microfluidic body except for the open-ended distal tip portion of the microfluidic body.

4. The apparatus as recited in claim 1, wherein the microfluidic body is formed of a material selected from one of the following: a polymer, a copolymer, an elastomer, a ceramic, quartz, silicon, silicon dioxide, silica, and glass.

5. A microfluidic chip for electrospray ionization comprising:

a bottom polymer plate formed with at least two non-intersecting fluid channels that are each in fluid communication with corresponding fluid reservoirs included within the polymer plate;

an electrospray tip positioned within a recessed portion formed in the bottom polymer plate, wherein the electrospray tip includes an open-tip region at which each of the non-intersecting fluid channels converge; and

a top polymer plate that substantially encloses the non-intersecting fluid channels formed in the bottom polymer plate except for the open-tip region of the electrospray tip.

6. The microfluidic chip as recited in claim 5, wherein the electrospray tip is formed with a sharp point that is protected within the recessed portion formed in the bottom polymer plate.

7. A method for conducting mass spectrometric analysis of multiple samples in a sequential manner comprising the following steps of:

selecting a microfluidic chip formed with a electrospray tip, wherein the microfluidic chip includes a plurality of fluid channels that converge at an open-end distal portion of the electrospray tip;

positioning the electrospray tip relative to a mass spectrometer for analysis of multiple samples;

introducing a first sample through a first fluid channel within the microfluidic chip that directs an electrospray of the first sample emanating from the open-end distal portion of the electrospray tip into the mass spectrometer;

conducting a mass spectrometric analysis of the first sample;

introducing a second sample through a second fluid channel within the microfluidic chip that directs an electrospray of the second sample emanating from the open-end distal portion of the electrospray tip into the mass spectrometer;

conducting a mass spectrometric analysis of the second sample, wherein the mass spectrometric analysis of the first sample and the second sample are conducted sequentially from the same electrospray tip formed on the microfluidic chip.

8. The method as recited in claim 7, further comprising the step of:

introducing a calibration solution through a third channel within the microfluidic chip that directs an electrospray of the calibration solution emanating from the open-end distal portion of the electrospray tip into the mass spectrometer.

9. The method as recited in claim 7, further comprising the step of:

introducing a calibration solution through the first or second channel within the microfluidic chip that directs an electrospray of the calibration solution emanating from the open-end distal portion of the electrospray tip into the mass spectrometer.

10. The method as recited in claim 7, further comprising the step of:

introducing a sheath flow through a single or a pair of relatively outer channels through the microfluidic chip that directs an electrospray of the sheath flow emanating from the open-end distal portion of the electrospray tip into the mass spectrometer.

11. The method as recited in claim 10, wherein the sheath flow is simultaneously introduced with either the introduction of the first sample or the second sample.

12. The method as recited in claim 10, the sheath flow is introduced using electrokinetic forces or by application of fluidic pressure.